

**METHODS AND SYSTEMS FOR ANALYZING FLUTTER TEST DATA USING  
NON-LINEAR TRANSFER FUNCTION FREQUENCY RESPONSE FITTING**

**ABSTRACT OF THE DISCLOSURE**

5           Methods and systems for analyzing flutter test data using non-linear transfer function  
frequency response fitting are provided. In one embodiment, a plurality of data points are  
read, with each data point representing a motion of an aeroelastic structure (*e.g.* an aircraft  
surface) at a different location. A closed form fit to the plurality of data points is performed  
to obtain an initial curve fit condition. At least one non-linear transfer function frequency  
10 response curve fit is then performed to the plurality of data points.

